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DDT Residual Spray
For
Control of Household Pest Control

GENERAL

DDT acts both as a contact and stomach poison. Its value as an insecticide is its lasting or residual effect. When DDT is sprayed on walls, ceilings, floors, and other surfaces, it leaves a deposit or residue of small crystals. When insects such as flies, mosquitoes, bed bugs, fleas, roaches, and certain other insects walk over or rest on this deposit long enough to obtain sufficient exposure, they will be killed. Just how DDT kills is not fully understood at present. Evidently it is absorbed through the insect's feet as they walk over the DDT residue on a treated surface. After a short period of exposure, the insects become restless, drag their legs and move about in a jerky spasmodic manner. Finally they develop tremors and die, although death does not take place until hours later. Mosquitoes and house flies may fly away elsewhere and die. Dead insects may not be apparent after the house is treated. The test of DDT's effectiveness is the absence of live insects, not the presence of dead ones. Due to their habits, the presence of live mosquitoes and house flies in the house during the early morning hours indicates that the house was not adequately treated or that the effectiveness of the treatment has been lost. In either event the house should be treated again.

MATERIAL AND EQUIPMENT

1. DDT concentrates containing from 20 to 35 per cent DDT is the stock material of choice. In ordering the concentrate, it must be specified that it is for use in preparing a water emulsion spray.
2. Ordinary knapsack type, hand-operated, pressure sprayer is suitable for residual spraying if operated in a correct manner. The nozzle should be adjusted to give a fine spray, but not a mist. The average sprayer of the above type is equipped with a suitable nozzle; and when operated according to instructions given on the can, will deliver approximately 0.75 quart per minute. The amount of material delivered per minute should be determined. This may easily be accomplished by directing the discharge from the sprayer into a quart measuring cup or similarly graduated container for one minute. This information is necessary in determining the area to be sprayed per minute in order that the correct amount of DDT may be deposited. The gaskets and foot valve of the sprayer may need replacements as they are not completely resistant to continuous use of the materials contained in the water emulsion spray.
3. Cloths (made of heavy material) to cover furniture. Good furniture, especially varnished furniture must be covered.
4. A 5-gallon can with a pouring spout will be needed for carrying the concentrate out into the county.
5. A quart measure for measuring the concentrate and water to be poured into the sprayer.

PREPARATION OF SPRAY AND RATE OF APPLICATION

The spray is to contain 5% DDT. This is made by pouring a measured

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amount of concentrate into the sprayer and then adding the proper amount of water. With a 25% DDT concentrate, one part of concentrate to four parts of water will make a 5% spray. After placing the concentrate and the water in the sprayer, the sprayer should be shaken to agitate the materials and form the water emulsion spray.

The spray should be applied at a rate so that 200 milligrams of DDT is deposited per square foot of treated area. One quart of 5% DDT spray uniformly applied over an area of 240 square feet will give a deposit of 200 milligrams of DDT per square foot. Therefore, the amount of spray that the sprayer will deliver in one minute should be determined. For example; If the sprayer delivers 0.75 quarts of 5% spray per minute, the area that should be covered in one minute with this sprayer will be 180 square feet. One of the most important steps in DDT residual spraying is the uniform application of the spray so that the required deposit of DDT is obtained.

The dosage of 200 milligrams of DDT per square foot or one quart of 5% spray per 240 square feet should be sufficient for at least four months.

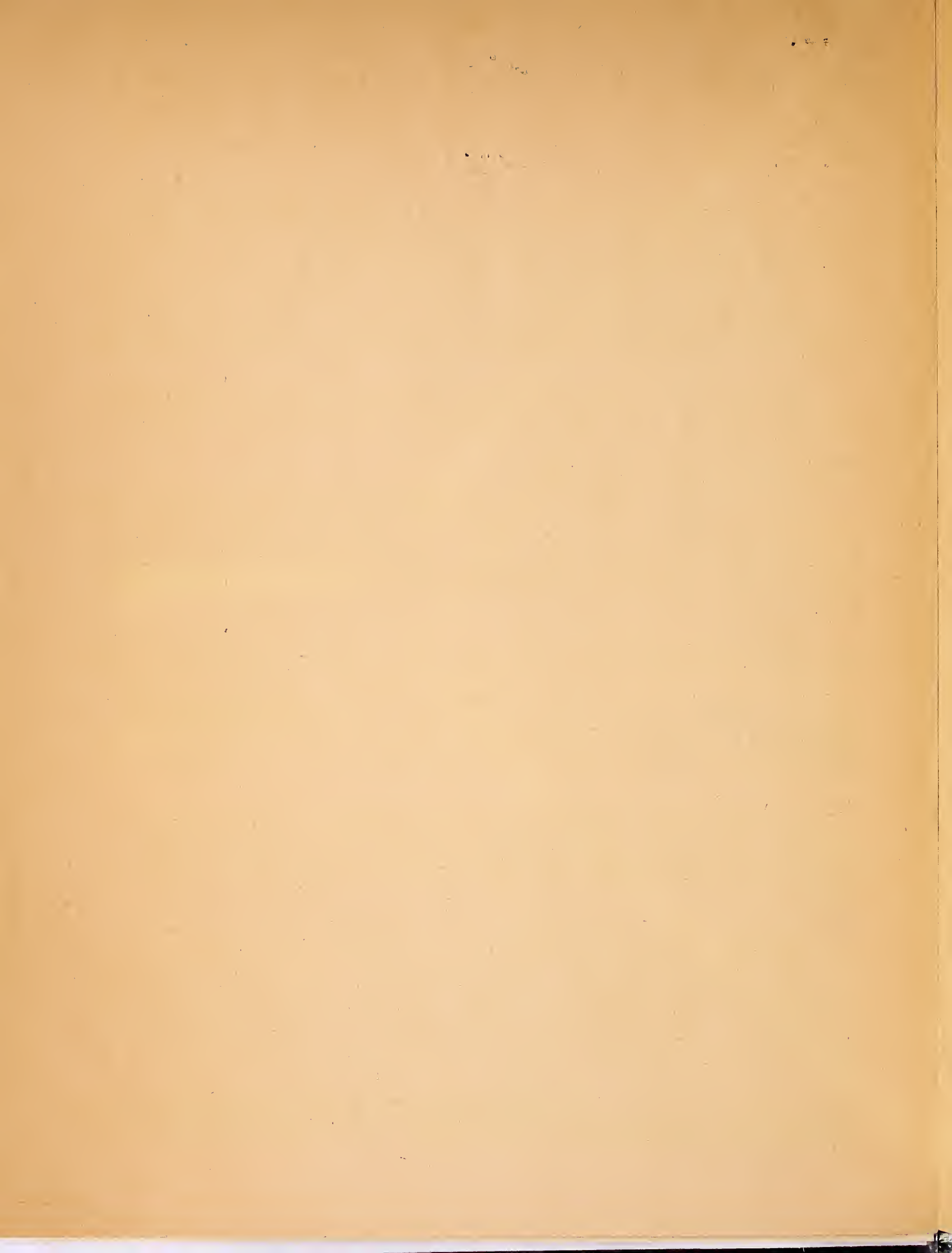
PREPARATION OF HOUSE FOR SPRAYING

All furnishings should be moved away from the walls and towards the center of the room to clear the way for spraying the walls and ceilings. Varnished furniture should be placed in the center of the room and covered with the cover cloths before spraying operations begin. The clean side of the cover cloth should always be placed on the furniture. If the floors are varnished they should be protected with newspapers or other suitable covering.

The bed may be pulled away from the wall and the dresser turned so that its back is against the side of the bed. The low pieces of furniture can then be placed at the foot of the bed. Pieces of glassware, pictures, clothes, small odds and ends can be placed directly on the bed. Everything must be covered. Surfaces such as backs of bookcases and desks may be sprayed. Chairs may be stacked with small objects and pictures placed on their seats. Food and dishes should be covered and put in a place where the spray will not reach them.

In wetting surfaces with DDT spray, it is important to guard against spotting. Shades may be pulled down to avoid spotting the window glass. Spotting can be removed from furniture, varnished floors, and dark baseboards with furniture polish applied liberally, then wiped with a clean, dry cloth.

Wipe light colored wall surface with a clean, dry rag to remove dust before spraying. Otherwise, droplets of spray will collect particles of dust and leave a dirt-spotted wall. If wall cleaning or painting is contemplated, it should be done before DDT is applied. The effectiveness of DDT is greatly shortened when applied to freshly painted surfaces. Calcimined surfaces should not be sprayed. The spray on these surfaces may cause the calcimine to run. Some wall surfaces may spot. This is especially true of certain shades of blue or green wallpaper. Most light wallpaper, however, will not show the deposit after it has dried. If there is any question about applying DDT to papered or painted surfaces, treat a small test area in an inconspicuous place and allow it to dry thoroughly to see the results. If a surplus of the spray re-



sults in white spotting, wait until the sprayed surface dries before removing it by rubbing with a clean white cloth.

APPLICATION OF THE SPRAY

The house occupants should get out of the way of the sprayer. It is best that they remain out-of-doors. The nozzle should be held from 15 to 18 inches from the surface to be treated. Begin in one corner and spray from floor upward to ceiling and downward from ceiling to floor in steady movements. Avoid spraying dark or varnished areas, window panes or any glass surfaces wherever possible, for these will spot.

When the walls are finished, the ceilings should be treated, using the same steady spraying motion. When spraying ceilings, the metal tubing should be held at a slight angle and the spray applied while the sprayer is walking backwards. As one width of spray is finished, the person operating the sprayer should move over a step and begin the next width.

Clothes hanging on walls inside or outside the closets should be removed and the walls behind them sprayed. Every room should be sprayed. Spray porches whether they be screened or unscreened. Also spray all screens. Spray undersides of beds and backs of large pieces of furniture, such as upright pianos, bureaus, dressers, tall chests and cabinets.

If bed bugs are present, spray the bedsteads, paying particular attention to cracks in the wood and to joints. Spray springs and mattresses thoroughly, especially the folds and crevices around the mattress tufts or buttons. For roach control, legs and undersurfaces of tables and chairs should be sprayed. Pantries and other places where food is handled and stored should be treated. Special attention should be given cracks in and around cupboards, sinks, plumbing and wherever particles of food accumulate. Do not spray food or dishes.

After spraying is completed, members of the family may enter immediately if they wish, but about thirty minutes should be allowed for the spray to dry and the odor to disappear. Members of the family should be told that if they touch any wet surface, a streak will remain when the spraying liquid dries.

PRECAUTIONS TO BE TAKEN

DDT is toxic, but no more so than other common insecticides, if properly handled. When applied at the recommended rate, there is no danger to occupants of the house. Over a thousand men were employed on a DDT residual house spraying program throughout the Southeastern United States during 1945. There have been no reported cases of DDT poisoning resulting from mixing and applying the spray.

Simple precautions that should be followed are: Do not spray DDT on foods, cooking utensils, dishes or silverware; wear respirators and goggles if exposed to daily spraying; wash parts of body that come in contact with DDT spray; remove clothing if it becomes soaked with the spray; remove clothing if the concentrate is spilled on them.

If DDT is swallowed accidentally, drink some mustard water immediately. This is made by adding one tablespoon of mustard to a glass of warm water. Mustard water causes vomiting which empties the stomach. CALL OR SEE A PHYSICIAN AT ONCE.

